

No.



8400140

# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**Busch Agricultural Resources, Inc.**

Whereas, THERE HAS BEEN PRESENTED TO THE

**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BARLEY

'Premier'

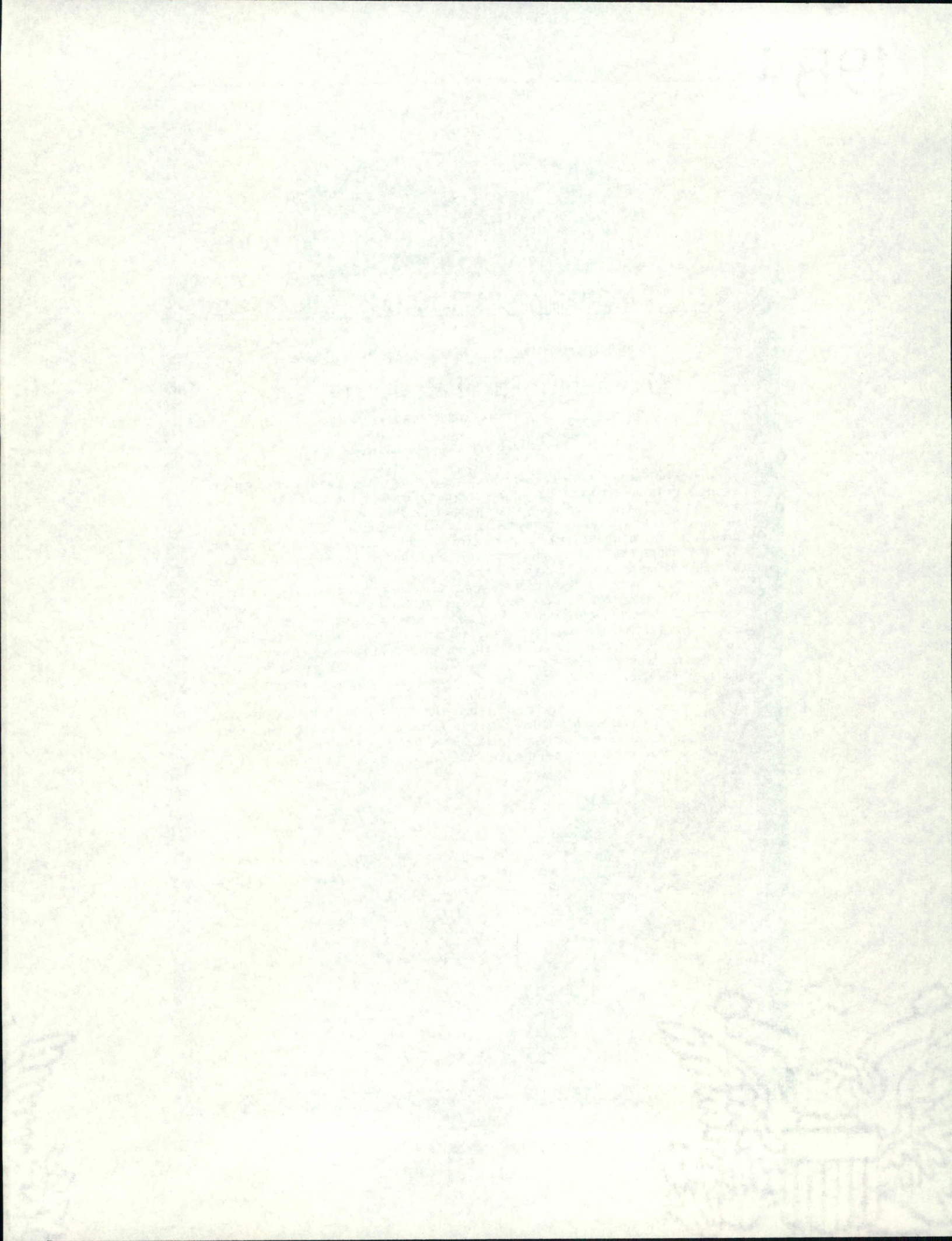
In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 26th day of July in the year of our Lord one thousand nine hundred and eighty-five.

Attest:

*Kenneth A. Egan*  
Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*John R. Blod*  
Secretary of Agriculture







U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
WAREHOUSE & SEED DIVISION

FORM APPROVED: OMB NO. 05B1-0055

## APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

|  |  |   |  |   |  |
|--|--|---|--|---|--|
| 1. NAME OF APPLICANT(S)<br>Busch Agricultural Resources, Inc.  |  | 2. TEMPORARY DESIGNATION<br>2B78-471<br>NAPB-18   |  | 3. VARIETY NAME<br>Premier  |  |
| 4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code)<br>806 N. Second Street<br>Berthoud, CO 80513   |  | 5. PHONE (Include area code)<br>(303) 532-3721  |  | FOR OFFICIAL USE ONLY<br>VPPO NUMBER<br>8400140   |  |
| 6. GENUS AND SPECIES NAME<br>Hordeum vulgare L.  |  | 7. FAMILY NAME (Botanical)<br>Gramineae   |  | FILING<br>DATE<br>7/13/84<br>TIME<br>2:30 <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M.            |  |
| 8. KIND NAME<br>Spring Barley  |  | 9. DATE OF DETERMINATION<br>March 1, 1978<br>March 1, 1980  |  | FEES RECEIVED<br>AMOUNT FOR FILING<br>\$ 1,800<br>DATE<br>8/22/84<br>AMOUNT FOR CERTIFICATE<br>\$ 200.00<br>DATE<br>6/20/85 |  |
| 10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.)<br>Corporation   |  |   |  | 12. DATE OF INCORPORATION<br>1-1-81   |  |
| 11. IF INCORPORATED, GIVE STATE OF INCORPORATION<br>Delaware   |  |   |  | 13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS            |  |
| Melvern K. Anderson<br>Busch Agricultural Resources, Inc.<br>806 N. Second Street<br>Berthoud, Colorado 80513 (303) 532-3721   |  |   |  | Chris Bruns<br>NAPB<br>806 N. Second Street<br>Berthoud, Colorado 80513 (303) 532-3721                                      |  |
| 14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED  |  |   |  |   |  |
| a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)   |  | c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)   |  |   |  |
| b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement  |  | d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of the Variety   |  |   |  |
| 15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) <input checked="" type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input type="checkbox"/> No   |  |   |  |   |  |
| 16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |  | 17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input checked="" type="checkbox"/> Foundation <input checked="" type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified |  |   |  |
| 18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? <input checked="" type="checkbox"/> Yes (If "Yes," give date) <input type="checkbox"/> No   |  |   |  |   |  |
| Not previously, current application is for protection in the United States.  |  |   |  |   |  |
| 19. HAS THE VARIETY BEEN OFFERED FOR SALE OR MARKETED IN THE U.S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input type="checkbox"/> No  |  |   |  |   |  |
| Foundation seed; March, 1983 United States<br>Foundation & Registered seed; March, 1984 United States  |  |   |  |   |  |
| 20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.<br>The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.<br>Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties. |  |   |  |   |  |
| SIGNATURE OF APPLICANT<br>Busch Ag. Resources, Inc.; Melvern K. Anderson   |  |   |  | DATE<br>6/29/84   |  |
| SIGNATURE OF APPLICANT   |  |   |  | DATE  |  |

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## EXHIBIT A.

Origin and Breeding History of Premier (2B78-471; NAPB-18;  
NA-18; Premier)

PEDIGREE: Summit/Klages

DATE OF CROSS: The cross was made in the fall 1975 greenhouse; the F<sub>1</sub> was grown in the spring 1976 greenhouse to produce F<sub>2</sub> seed.

HISTORY: F<sub>2</sub> plants were grown at Berthoud, Colorado and Twin Falls Idaho in 1976. Single plant selections were advanced to F<sub>3</sub> plots and grown at Berthoud, Colorado in 1977. Selected F<sub>3</sub> plots were individually harvested and sent to New Zealand for increase. Malting quality tests on remnant F<sub>3</sub> seed assisted in the selection of an F<sub>4</sub> plot in New Zealand for yield testing an F<sub>2</sub> derived F<sub>5</sub> bulk at Berthoud, Colorado and Twin Falls, Idaho in 1978. This line advanced to second year yield trials in 1979 and 300 head selections were made to initiate purification and multiplication. These 300 head-rows were grown in 1980 and 159 selected to serve as bulk breeder seed. This seed served as the pure seed source and the yield trial source. Premier (2B78-471) was tested in 1980 at Berthoud, Colorado and Nampa, Idaho. Premier was tested in our own trials from 1981-83 at Berthoud, Colorado and in 1984 at Berthoud, Colorado and Idaho Falls, Idaho. Premier was also tested as NA or NAPB-18 in intermountain state and federal barley breeding programs in Colorado, Wyoming, Montana, Idaho, Washington, Oregon, and northern California. Premier was as tested in the Western Spring Barley nursery in 1983 and 1984.

Purification was initiated in 1980. Three hundred head-rows were grown at our Berthoud, Colorado location and 141 rows were discarded. These selected head-rows were also grown again in 1981 and bulked harvested to form breeder seed. Breeder seed was increased in 1982 at Berthoud, Colorado and Foundation seed was produced during the winter of 1982-83 at Yuma, Arizona and in 1983 at Berthoud, Colorado. Registered seed was produced in 1983 in Idaho.

Future head-rows will be grown as necessary to constitute breeder seed. All seed production fields to date have been stable and uniform.

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EXHIBIT B.  
Statement of Novelty

Premier most closely resembles Klages in appearance; but can easily be distinguished by the following morphological characteristics:

- Premier's glume hair covering is confined to a band. Klages' glumes are covered with hair.
- Premier's seed has few teeth on the lateral veins. Klages' seed has no teeth on the lateral veins.
- Premier has a more nodding head than Klages.
- Premier is more resistant to Helminthosporium sativum than Klages.

|                         | <u>Klages</u> | <u>Premier</u> |
|-------------------------|---------------|----------------|
| Idaho Falls, Idaho 1982 | 4.5           | 3.0            |
| Idaho Falls, Idaho 1983 | 5.0           | 2.0            |

\* Spot blotch (H. sativum) ratings:

- 1 = no infection
- 5 = heavy infection

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SPX COLLECTOR CREDIT  
SOUTH MOUNTAIN CREDIT  
BONDS & SAVINGS BONDS

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OBJECTIVE DESCRIPTION OF VARIETY  
BARLEY (*HORDEUM VULGARE*)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S)

Busch Agricultural Resources, Inc.

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

806 N. Second Street  
Berthoud, Colorado 80513

FOR OFFICIAL USE ONLY

PVPO NUMBER

8400140

VARIETY NAME OR TEMPORARY  
DESIGNATION

Premier

Place the appropriate number that describes the varietal character of this variety in the boxes below.

Place a zero in first box (i.e.  or ) when number is either 99 or less or 9 or less.

## 1. GROWTH HABIT:

 1 = SPRING 2 = FACULTATIVE WINTER 3 = WINTER  Early Growth: 1 = PROSTRATE 2 = SEMIPROSTRATE  
3 = ERECT

## 2. MATURITY (50% Flowering):

 1 = EARLY (California Mariout) 2 = MIDSEASON (Betzes) 3 = LATE (Frontier) No. of days Earlier than .....  } 1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON  
 No. of days Later than .....  } 5 = PIROLINE 6 = PRIMUS 7 = UNITAN 8 = Klages

## 3. PLANT HEIGHT (From soil level to top of head):

 1 = SEMIDWARF 2 = SHORT (California Mariout) 3 = MEDIUM TALL (Betzes) 4 = TALL (Conquest) Cm. Shorter than .....  } 1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON  
 Cm. Taller than .....  } 5 = PIROLINE 6 = PRIMUS 7 = UNITAN 8 = Klages

## 4. STEM:

 Exertion (Flag to spike at maturity): 1 = 0 - 3 cm. 2 = 3 - 10 cm.  Anthocyanin: 1 = ABSENT 2 = PRESENT  
3 = 10 - 15 cm. NO. OF NODES (Originating from node above ground) Collar Shape: 1 = CLOSED 2 = V-SHAPED 3 = OPEN  Shape of Neck: 1 = STRAIGHT 2 = SNAKY  
4 = MODIFIED CLOSED OR OPEN 3 = OTHER (Specify)

## 5. LEAF:

 Basal leaf sheath (seedling): 1 = GLABROUS 2 = PUBESCENT  Position of flag leaf (at boot stage): 1 = DROOPING  
2 = UPRIGHT Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY  MM. WIDTH (First leaf below flag leaf) CM. LENGTH (First leaf below flag leaf)  Anthocyanin in leaf sheath: 1 = ABSENT 2 = PRESENT

## 6. HEAD:

 Type: 1 = TWO-ROWED 2 = SIX-ROWED  Density: 1 = LAX 2 = ERECT (Not dense)  
3 = ERECT (Dense) Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE  Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY  
4 = OTHER (Specify) 3 = WAXY Lateral Kernels Overlap: 1 = NONE 2 = AT TIP  Rachis (Hair on edge): 1 = LACKING 2 = FEW 3 = COVERED  
3 = 1/4 - 1/2 OF HEAD

## 7. GLUME:

 Length: 1 = 1/3 OF LEMMA 2 = 1/2 OF LEMMA  Hairs: 1 = NONE 2 = SHORT 3 = LONG  
3 = MORE THAN 1/2 OF LEMMA Hair covering: 1 = NONE 2 = RESTRICTED TO MIDDLE 3 = CONFINED TO BAND 4 = COMPLETELY COVERED Awns: 1 = LESS THAN EQUAL TO LENGTH OF GLUMES 2 = EQUAL TO LENGTH OF GLUMES  
3 = MORE THAN EQUAL TO LENGTH OF GLUMES Awn Surface: 1 = SMOOTH 2 = SEMISMOOTH 3 = ROUGH

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## FORM GR-470-5 (Reverse)

## 8. LEMMA:

☐ 5 Awn: 1 = AWNLESS 2 = AWNLETS ON CENTRAL ROWS, AWNLESS ON LATERAL ROWS  
3 = SHORT ON CENTRAL ROWS, AWNLETS ON LATERAL ROWS 4 = SHORT (less than equal to length of spike)  
5 = LONG (longer than spike) 6 = HOODED

☐ 3 Awn Surface: 0 = AWNLESS 1 = SMOOTH 2 = SEMISMOOTH 3 = ROUGH

☐ 2 Teeth: 1 = ABSENT 2 = FEW 3 = NUMEROUS ☐ 1 Hair: 1 = ABSENT 2 = PRESENT

☐ 1 Shape of base: 1 = DEPRESSION 2 = SLIGHT CREASE 3 = TRANSVERSE CREASE ☐ 2 Rachilla Hairs: 1 = SHORT 2 = LONG

## 9. STIGMA:

☐ 2 Hairs: 1 = FEW 2 = MANY

## 10. SEED:

☐ 2 Type: 1 = NAKED 2 = COVERED ☐ 1 Hairs on Ventral Furrow: 1 = ABSENT 2 = PRESENT

☐ 2 Length: 1 = SHORT (8.0 mm.) 2 = SHORT TO MIDLONG (7.5 - 9.0 mm.) 3 = MIDLONG (8.5 - 9.5 mm.)  
4 = MIDLONG TO LONG (9.0 - 10.5 mm.) 5 = LONG (10.0 mm.)

☐ 2 Wrinkling of hull: 1 = NAKED 2 = SLIGHTLY WRINKLED 3 = SEMIWRINKLED 4 = WRINKLED

☐ 1 Aleurone Color: 1 = COLORLESS (White or Yellow) 2 = BLUE

☐ 0 ☐ 5 PERCENT ABORTIVE ☐ 4 ☐ 5 GMS. PER 1000 SEEDS

11. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 3 = moderately resistant 4 = moderately susceptible

|                                       |   |   |   |
|---------------------------------------|---|---|---|
| <input type="checkbox"/> 0 SEPTORIA   | <input type="checkbox"/> 0 NET BLOTCH       | <input type="checkbox"/> MR SPOT BLOTCH | <input type="checkbox"/> 0 POWDERY MILDEW   |
| <input type="checkbox"/> 1 LOOSE SMUT | <input type="checkbox"/> 0 BACTERIAL BLIGHT | <input type="checkbox"/> 0 COVERED SMUT | <input type="checkbox"/> 0 FALSE LOOSE SMUT |
| <input type="checkbox"/> 1 STEM RUST  | <input type="checkbox"/> MR LEAF RUST       | <input type="checkbox"/> 0 SCAB         | <input type="checkbox"/> 0 SCALD            |
| <input type="checkbox"/> 0 AY         | <input type="checkbox"/> 0 BSMV             | <input type="checkbox"/> 0 BYDV         | <input type="checkbox"/> 0 OTHER (Specify)  |

12. INSECT: (0 = Not tested, 1 = Susceptible 2 = Resistant) 3 = moderately resistant 4 = moderately susceptible

|  |  |  |                                     |
|--|--|--|-------------------------------------|
| <input type="checkbox"/> 0 GREEN BUG     | <input type="checkbox"/> 0 ENGLISH GRAIN APHID | <input type="checkbox"/> 0 CHINCH BUG    | <input type="checkbox"/> 0 ARMYWORM |
| <input type="checkbox"/> 0 GRASS HOPPERS | <input type="checkbox"/> 0 CERIAL LEAF BETTLE  | <input type="checkbox"/> OTHER (Specify) |                                     |

HESSIAN FLY RACES

|                             |                            |                            |                            |
|-----------------------------|----------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> GP | <input type="checkbox"/> A | <input type="checkbox"/> B | <input type="checkbox"/> C |
| <input type="checkbox"/> D  | <input type="checkbox"/> E | <input type="checkbox"/> F | <input type="checkbox"/> G |

13. CHEMICAL (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

☐ 0 DDT ☐ 0 OTHER (Specify)

## 14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

| CHARACTER       | NAME OF VARIETY | CHARACTER             | NAME OF VARIETY |
|-----------------|-----------------|-----------------------|-----------------|
| Plant tillering | Klages          | Seed size             | Klages          |
| Leaf size       | Klages          | Coleoptile elongation | Klages          |
| Leaf color      | Klages          | Seedling pigmentation | Klages          |
| Leaf carriage   | Klages          |                       |                 |

REFERENCES: The following publications may be used as a reference aid for the standardization of character descriptions and terms used in this form:

1. Wiebe, G. A., and D. A. Reid, 1961, Classification of Barley Varieties Grown in the United States and Canada in 1958, Technical Bulletin No. 1224, U.S. Dept. of Agriculture.
2. Reid, D. A., and G. A. Wiebe, 1968, Barley: Origin, Botany, Culture, Winter Hardiness, Genetics, Utilization, Pests, Agriculture Handbook No. 338, U.S. Dept. of Agriculture. pp. 61 - 84.
3. Malting Barley Improvement Association, Milwaukee, Wisconsin, 1971, Barley Variety Dictionary.

COLOR: Nickerson's or any recognized color fan may be used to determine color of the described variety.

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## EXHIBIT D.

## Additional Description of Premier

Premier is a two-rowed spring barley developed by Busch Agricultural Resources, Inc. It is midseason in maturity and has excellent malting quality.

Premier has a semiprostrate juvenile growth habit. The spike is lax with a nodding head type. Lemma awn is long and rough. Rachilla hairs are long. Seed length is short to midlong with few teeth on the central and lateral veins of the lemma. The aleurone is colorless and the hull is adhering and ~~slightly~~ wrinkled.

~~slightly~~  
SEMI-

Each as per  
letter dtd  
4/15/85

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